

CLAIMS

We claim:

1. A method of transmission of an image adapted to a first display area to an apparatus having a smaller second display area, said method comprising:

dividing the image into a plurality of regions each having a corresponding block of data;

converting each block into a frequency domain representation comprising an array of coefficients;

cropping frequency coefficients of a portion of the arrays so as to cause corresponding regions of the image to be scaled when converted into a spatial domain representation dependent on the amount of cropping wherein cropped blocks of coefficients are obtain;

transmitting coefficient data including the cropped blocks and un-cropped arrays of frequency coefficients to the apparatus for displaying a scaled version of the image in the second display area.

2. The method as described in Claim 1 further comprising:

identifying a region of interest within the scaled version of the image wherein at least one of the plurality of blocks of data corresponds to the identified region of interest;

wherein the frequency coefficient array of at least one block of data corresponding to the region of interest is cropped less than the coefficient arrays corresponding to the remaining regions of the scaled version of the image.

3. The method as described in Claim 1 further comprising compressing the coefficient data prior to transmitting and decompressing prior to displaying in the second display area.

4. The method as described in Claim 2 further comprising:

storing the coefficient data prior to transmitting to the apparatus;

identifying a new region of interest within the image;

determining new coefficient data dependent on the new region of interest;

determining a sub-set of coefficient data representing the difference between the previously transmitted coefficient data and the new coefficient data; and

transmitting this sub-set of coefficient data to the apparatus for combining with coefficient data previously transmitted to the apparatus so as to provide image data for redisplaying the scaled version of the image in the second display area dependent on the new region of interest.

5. The method as described in Claim 4 wherein identifying a new region of interest comprises selecting the new region through a user interface.

6. The method as described in Claim 1 wherein each block has an associated scale factor dependent on the size of the first display area, the size of the second display area and the size of the block wherein each block is cropped according to its associated scale factor.

7. The method as described in Claim 6 further comprising selecting a scale factor for each of the blocks by adjusting the size of each of the plurality of regions.

8. The method as described in Claim 1 wherein the apparatus is a handheld device.

9. The method as described in Claim 1 further comprising transmitting coefficient data in a perceptually significant sequence by transmitting low frequency coefficients corresponding to the entire image then transmitting higher frequency coefficients corresponding to the ROI and then transmitting the remainder of the coefficient data that is required.

10. A system for transmitting an image adapted to a first display area, said system comprising:

image divider for dividing the image into a plurality of regions each having a corresponding block of data;

image data converter for converting each block into a frequency domain representation comprising an array of coefficients;

frequency coefficient cropper for cropping frequency coefficients of a portion of the arrays so as to cause corresponding regions of the image to be scaled when converted into a spatial domain representation dependent on the amount of cropping wherein cropped blocks of coefficients are obtain;

data transmitter for transmitting coefficient data including the cropped blocks and un-cropped arrays of coefficients to the apparatus for displaying a scaled version of the image in a second smaller display area.

11. The system of Claim 9 wherein the apparatus comprises a user interface for selecting a region of interest (ROI) within the second display area and for transmitting a ROI pointer to the coefficient cropper wherein the selected ROI has at least one corresponding array of coefficients and wherein in response to the ROI pointer, the coefficient cropper crops at least one ROI coefficient array less than the arrays corresponding to the remaining of the plurality of regions.

12. The system as described in Claim 9 further comprising an encoder for encoding the coefficient data prior to transmitting to the apparatus and the apparatus comprising a decoder for decoding encoded coefficient data.

13. The system as described in Claim 10 wherein the apparatus further comprises means for driving the second display area dependent on the transmitted coefficient data to display the scaled version of the image.

14. A system as described in Claim 10 wherein the display driver comprises a means for converting the coefficient data into a spatial domain representation.

15. The system as described in Claim 13 wherein the apparatus comprises a first means for storing transmitted coefficient data including previously received coefficient data and newly received coefficient data and the display driver further comprises a means for rendering the scaled version of the image within the second display screen, wherein the rendering means selects coefficients from the first storage means for displaying the scaled version of the image in response to the region of interest pointer.

16. The system as described in Claim 14 wherein the system further includes a second means for storing all coefficient data previously transmitted to the apparatus and comprising means for determining a subset of coefficients corresponding to the difference between previously transmitted coefficient data and new coefficient data corresponding to a new ROI pointer received from the apparatus.

17. The system as described in Claim 16 wherein the first and second storage means are synchronized under a guaranteed delivery protocol.